Efficacy of feed-based adjuvant vaccine against Streptococcus agalactiae in Oreochromis spp. in Malaysia.

ABSTRACT

This study was conducted to determine the systemic, mucosal immunity and protective capacity of the feed-based adjuvant vaccine (FAV) of Streptococcus agalactiae following oral vaccination against streptococcosis in tilapias. Two hundred and sixteen red tilapia fish were divided into three major groups. Each major group consisted eight tilapia kept in nine 2000 L glass aquaria. At day 0, all fish from the FAV group were fed with feed that had been incorporated with an adjuvant, while fish in the feed-based vaccine (FNV) group were fed with vaccine incorporated into the pellet without adjuvant. Fish in the control-unvaccinated group, FC, were fed with normal commercial pellet. Booster dose was performed on day 14 post immunization. Fish from each group were sacrificed on a weekly basis for the entire 7 weeks. Serum, body mucus and gut lavage fluid were evaluated for antibody responses by indirect ELISA, while histological examination was carried out on the gut following intraperitoneal challenge. The FAV group had a significantly higher protection ($P < 0.05$) following challenge with 3.4×109 CFU mL−1 of live S. agalactiae than FNV group. This level of protection may be due to high antibody responses, increase in size of gut-associated lymphoid tissue and high number of lymphocytes in the FAV group

Keyword: Streptococcus agalactiae; Oral; Adjuvant; Tilapia.